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65. The combination of claim 59, wherein the golf club head is a wedge-type head.

Remarks

Claims 4, 11-13, 24, and 29-60 were pending in the application as examined. Claims 4, 11, 13, 24, and 39 were withdrawn from consideration; claim 12 was held to be allowable; claim 40 was objected to, but would be allowable if rewritten to incorporate the limitations of the claims from which it depends; and claims 29-38 and 41-60 were rejected.

The present Amendment cancels claims 4, 11-13, 24, 29-49, and 55-58. The Amendment also amends claims 50-54, 59, and 60, and adds new claims 61-65. This Amendment adds no new subject matter to the application. Furthermore, Applicant specifically reserves the right to pursue the subject matter of the canceled or amended claims in a related application; the present Amendment is introduced for the *sole* purpose of focusing the issues in this case and speeding its progress toward allowance. Applicant respectfully requests reexamination and reconsideration of the present case, as amended.

As amended, the present application contains claims to *iron-type* golf clubs having a head, a single straight hosel and a single straight shaft attached at a non-zero lean angle (claim 60), or to an *iron-type* head/hosel combination with a *single, straight* hosel oriented so that a *single, straight* shaft connected to the hosel would be positioned with a non-zero lean angle (claim 59). Additional claims specify that:

1) the non-zero lean angle is *present at the time of manufacture* (claim 50);

2) the non-zero lean angle is *greater than 3 degrees* (claim 51-53)

3) the *center of mass is in substantially the same location* as at the time of manufacture (claim 54); or

4) the club (or head/hosel combination) is a *wedge* (claims 61-65).

The rejections remaining in the case are art rejections for lack of novelty over Muldoon

(claims 51-53) or any of a variety of other references (claims 59 and 60) or for obviousness over Muldoon in view of Ashcraft (claims 50 and 54). These rejections are addressed individually below.

Rejection of claims 51-53 for lack of novelty over Muldoon

The Examiner rejected claims 51-53 for lack of novelty over Muldoon. This rejection should be withdrawn. Muldoon describes golf clubs that are *bent* to achieve a non-zero lean angle. Clearly, Muldoon cannot teach or suggest the clubs of claims 51-53, which have a *straight* shaft and *straight* hosel. In fact, Muldoon cannot teach or suggest *any* of the claimed golf clubs or head/hosel combinations having a straight shaft and/or hosel.

Muldoon particularly cannot teach or suggest the claimed golf clubs having a lean angle of *greater than three degrees*. In his rejection, the Examiner asserts that Figure 4 of Muldoon shows a club having a lean angle of six (6) degrees. Applicant challenges this assertion. Nowhere in Figure 4, or in the specification describing it, is any particular bend angle defined. The Examiner has apparently assumed that the Figures were drawn to scale, and has measured a bend angle *from the Figures*. There is no evidence that Muldoon ever achieved, intended to achieve, or could have achieved a bend angle of 6 degrees. In fact, Muldoon never discusses the range of bend angles that can be achieved using his bending methods. It is well accepted that the Figures in a patent application do not need to be manufacturing drawings and that they do not necessarily need to be drawn to scale. It is in fact quite conceivable that the bend angle shown in the Figure 4 was chosen independently of the inventor, e.g., by a draftsman or patent practitioner for purposes of clarity or to conform with the rules that are set forth under 37 C.F.R. § 1.84.

why not.

Besides the lack of evidence supporting the Examiner's assertion, Applicant respectfully submits that one of ordinary skill in the art would understand that the bending methods of Muldoon are limited to bending clubs a few degrees and that the resulting club would not have a straight hosel. Indeed, as stated by Mr. John Hampford in the Declaration under 37 C.F.R. §

1.132 that was submitted with the response to the Office Action of August 29, 2001, it is well known in the art that even clubs with relatively malleable hosels cannot be bent beyond a certain point, typically a few degrees, without breaking and that bending the hosel weakens its mechanical properties (e.g., tensile strength), in addition to introducing an unattractive kink into the club.

Accordingly, since the bending methods of Muldoon cannot be used to produce an iron-type golf club with a *straight* hosel and a lean angle that is *greater than 3 degrees*, Muldoon cannot anticipate or render obvious the present claims. Applicant therefore respectfully requests that the Examiner withdraw the rejection over Muldoon.

Rejection of claims 59 and 60 for lack of novelty over various references

The Examiner rejected claims 59 and 60 for lack of novelty over Turner, Knox, Solheim, Howard, Izett, or Taylor. Applicant challenges this rejection, and addresses each piece of art individually below. Applicant further points out that the arguments presented below are equally applicable to the other claims pending in this case, which, like claims 59 and 60, are directed to *iron-type* clubs and/or to clubs having a *single, straight* shaft and/or a *single, straight* hosel.

Turner -- The Examiner rejected claims 59 and 60 over Figure 5 of Turner. Figure 5 depicts a wood-type club with a large negative offset and an angled hosel. Claims 59 and 60 recite *iron-type* clubs. Turner cannot anticipate these claims. Furthermore, Turner provides no teaching or suggestion of an *iron-type* club and therefore cannot render the claims obvious. As is well known in the art, and is further established by the accompanying Declaration under 37 CFR § 1.132 by Mr. Jerrett Garner, a skilled golf club manufacturer generally *does not* apply principles of wood club design to irons. Simply put, woods and irons are different entities, both structurally and functionally. As pointed out in Mr. Garner's Declaration, Turner itself provides ample evidence of this fact. Turner's invention relates to wood-type clubs *having a large*

negative offset (see, for example, column 1, lines 6-13, which reads "The angled hosel golf club of this invention is characterized by a hosel connected to the clubhead *at the back of the clubhead away from the face*, rather than the front of the clubhead or near the face, as in conventional woods, and the hosel is angled toward the face of the clubhead at a predetermined face angle"). The specification and claims both indicate that the offset should be in the range of 1.25-1.75 inches. The teachings of Turner are limited to golf clubs having *both* a large negative offset *and* an angled hosel, and cannot be applied to any club that does not have a head sufficiently large to accommodate such an offset. An offset of this magnitude *is not possible* with irons. Turner cannot render obvious claims to iron-type clubs.

Even if the teachings of Turner could be considered *not* to be limited in applicability to golf clubs supporting a large negative offset, they could not render obvious the present claims because an *iron-type* golf club having a non-zero lean angle would have unexpected benefits as compared with such a *wood-type* club.

For example, introduction of a lean angle to an iron-type club allows a golfer to take advantage of certain design characteristics of the club head that are not materially relevant to wood-type clubs. In particular, while the sole of a wood-type club is typically virtually flat, iron-type club soles often have a significant bounce angle, the most extreme of which is found on a sand wedge. Attached Figures 1-3 help illustrate this point.

Attached Figures 1 and 2 show how the absence of a lean angle in traditional iron-type golf clubs impacts a golf shot. Figure 1 shows a golf club in the traditional design position. Here all club head characteristics (in particular loft and bounce) are measured assuming that the projection of the hosel (and, by extension, the shaft) of the club onto the ground is perpendicular to the intended line of flight. A golfer will achieve the design characteristics of the club only if his hands are neither ahead nor behind the ball at impact.

Figure 2 shows the club depicted in Figure 1 at impact where the golfer's hands are assumed to be ahead of the ball. The hosel and shaft are no longer perpendicular to the line of

flight. Note how the loft of the club has decreased and how the club "digs" instead of "bouncing".

Figure 3 shows the same iron-type club head where the hosel is now oriented to achieve a non-zero lean angle as described in the present application and recited in the present claims. Here, instead of being perpendicular, the angle of the projection of the hosel (and shaft) onto the ground has been customized so that when the golfer has his hands ahead of the ball, as in Figure 2, he will achieve the design characteristics described in Figure 1.

Iron-type clubs having a non-zero lean angle, as described in the '515 application, therefore have the unexpected advantage, as compared with wood-type clubs including a lean angle, that they allow a golfer to take advantage of both the design loft and the bounce of an iron-type head. This advantage is particularly remarkable for wedges (as recited, for example, in claims 61, 63, and 64).

Knox -- The Examiner rejected claims 59 and 60 as anticipated by Figure 3 of Knox. Figure 3 depicts a golf club with a serpentine hosel (see column 2, lines 67-68). Present claims 59 and 60 recite a *straight* hosel. Knox cannot anticipate these claims. Furthermore, no reading of Knox could render the claims obvious. Knox teaches that the longitudinal axis of a golf club shaft should pass through the center of gravity of the club head. A serpentine hosel is *required* to achieve this end; if the hosel were straight (i.e., in line with the longitudinal axis of the shaft), the hosel and shaft would stick directly into the center of the club face! Such a club would be inoperable. Knox therefore cannot anticipate or render obvious the present claims.

Solheim -- The Examiner rejected claims 59 and 60 as anticipated by Figure 1 of Solheim. Figure 1 depicts a golf club with a shaft that is bent below the grip (see also column 2, lines 3-14). Present claim 60 recites a golf club with a *straight* shaft. Solheim cannot anticipate this claim. Present claim 59 recites a golf club head/hosel combination in which the hosel is

connected to the head so that attachment of a straight shaft to the hosel would create a club with a non-zero lean angle. The only non-zero lean angle achieved in Solheim results from *bending* the shaft; the connection between hosel and head would generate a *zero* lean angle if a straight shaft were employed. Solheim therefore cannot anticipate this claim. Furthermore, Solheim cannot render the claims obvious. The invention of Solheim *is* the bending of the shaft. Solheim teaches that the extended centerline of a golf club grip should pass ahead of the club face. This result can only be achieved by *bending* the shaft; if the shaft were straight, the extended centerline of the grip would pass behind the club face. Solheim therefore cannot render obvious claims 59 and 60.

Howard -- The Examiner rejected claims 59 and 60 as anticipated by Figure 2 of Howard. Figure 2 depicts a driver with a *curved* shaft (see also column 1, lines 36-38). Present claim 60 recites a golf club with a *straight* shaft. Howard cannot anticipate this claim. Present claim 59 recites a golf club head/hosel combination in which the hosel is connected to the head so that attachment of a straight shaft to the hosel would create a club with a non-zero lean angle. The only non-zero lean angle achieved in Howard results from *curvature of* the shaft; the connection between hosel and head would generate a *zero* lean angle if a straight shaft were employed. Howard therefore cannot anticipate this claim. Furthermore, no reading of Howard could render the claims obvious. Howard teaches that the projected axis of the handle section of a driver should pass through the center of a theoretical sphere and pierce the plane of the sole at a point some distance behind the face of the club. This result can only be achieved by *curvature of* the shaft. Howard therefore cannot render obvious claims 59 and 60.

Izett -- The Examiner rejected claims 59 and 60 as anticipated by Figures 16 and 26 of Izett. Figure 16 depicts a two-shafted wedge club; Figure 26 depicts a similar club from which one shaft has been removed (leaving an empty hosel). Claims 59 and 60 recite a *single hosel*;

claim 60 recites a *single shaft*. Izett cannot anticipate these claims. Also, there is no teaching or suggestion anywhere in Izett of any club or club head with other than two hosels; Izett cannot render the claims obvious.

Taylor -- The Examiner rejected claims 59 and 60 as anticipated by Figures 1-3 of Taylor. Figures 1-3 depict a *wood-type* golf club with an angled hosel and a series of spaced parallel stripes on the upper surface of the golf club head. Claims 59 and 60 recite an *iron-type* golf club. Taylor cannot anticipate these claims. Furthermore, Taylor provides no teaching or suggestion of an *iron-type* club and cannot render the claims obvious. As noted above with respect to Turner, and supported by the accompanying Garner Declaration, a skilled golf club manufacturer generally *does not* apply principles of wood club design to irons. Once again, as indicated in the Declaration, consideration of the cited reference itself demonstrates the inapplicability of its teachings to irons. Taylor describes and claims wood-type clubs having *both* an angled hosel and a plurality of uniform parallel stripes equally spaced over a substantial portion of the top surface of the head. The specification clearly states that an angled hosel alone is *unable* to achieve the intended results of the invention (see column 5, lines 11-15, which reads "However, [the angled hosel] alone does not solve the problem as the flight of the golf ball must have some directional aid. The stripes on the head are arranged to be parallel to the line of flight to the target"); rather, stripes are required as an aiming aid. Thus, the teachings of Taylor can only be applied to clubs for which an aiming aid is required in order to position the club face perpendicular to the line to the target. Taylor itself points out that irons have a bottom line that is substantially straight, so that such an aiming aid is not required (see column 1, lines 12-14). Thus, Taylor *teaches away* from the use of iron-type clubs and cannot render claims to such clubs obvious.

Even if the teachings of Taylor were not limited to wood-type clubs, an iron-type club having a non-zero lean angle would be nonobvious over Taylor because, as discussed above with respect to Turner, such clubs would have unexpected benefits and characteristics.

Rejection of claims 50 and 54 for obviousness over Muldoon in view of Ashcraft

The Examiner rejected claims 50 and 54 for obviousness over Muldoon in view of Ashcraft. Muldoon is discussed above. Ashcraft teaches standard methods of forging wood clubs. The Examiner asserts that it would have been obvious to forge clubs according to the methods of Ashcraft instead of bending them as taught by Muldoon in order to manufacture clubs having a non-zero lean angle *at the time of manufacture* (claim 50) or having a *center of mass in substantially the same location as at the time of manufacture* (claim 54).

Applicant disagrees. Muldoon does not lack a teaching of forging. Muldoon teaches that forged clubs *should be bent*. Ashcraft therefore adds nothing to Muldoon. The Examiner is attempting to construct a rejection by applying improper hindsight reconstruction. The *present invention* teaches and claims clubs that are manufactured (e.g., forged) to have a non-zero lean angle at the time of manufacture, or to have a non-zero lean angle and a center of mass in substantially the same location as at the time of manufacture. Neither Muldoon nor Ashcraft contains such a teaching. Having considered the present invention, the Examiner is attempting to *replace* the bending methods of Muldoon with forging methods taught by Ashcraft. However, Ashcraft teaches the forging of metal woods. Muldoon teaches bending golf clubs. A proper combination of there two references produces a metal wood club forged according to the methods of Ashcraft and then bent according to the methods of Muldoon—i.e., a *bent, metal, wood*. No combination of Muldoon and Ashcroft can render obvious present claims 50 and 54, or any other claims now pending in the application.

Conclusion

For all of the reasons set forth above, the cited references cannot anticipate or render obvious the present claims; Applicant respectfully submits that the application is in condition for allowance. As required, Applicant has attached as Appendix A: Version with Markings to Show

Changes Made. Also, for the convenience of the Examiner, Applicant has attached an Appendix B: Claims Pending After Entrance of the present Amendment.

Please charge any fees that may be required for the present Response, or credit any overpayments, to our Deposit Account No. 03-1721.

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